GPRS/MMS Digital Infrared Trail Camera

Double Motion Detectors

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1. Instructions

1.1 General Description

This camera, is a digital trail with MMS function and the surveillance camera works automatically. It can be triggered at once by any movement of human (or animals) in a certain region of interest (ROI). The monitoring is done by a high sensitive Passive Infrared (PIR) motion sensor which automatically captures high quality pictures (up to 12M pixels) or records 1080p HD video clips (WVGA or QVGA).

At sunrise the unit begins to take color photos and videos until there is insufficient light (dusk) when it begins to take infrared

(monochrome) photos and videos.

It is easy to use, because there is a 2.5 inch colorful LCD display on camera and a sound recorder embedded in the camera,

Which supports MMS/SMS/E-mail via GPRS Network. It is resistant against water and snow for outside uses.

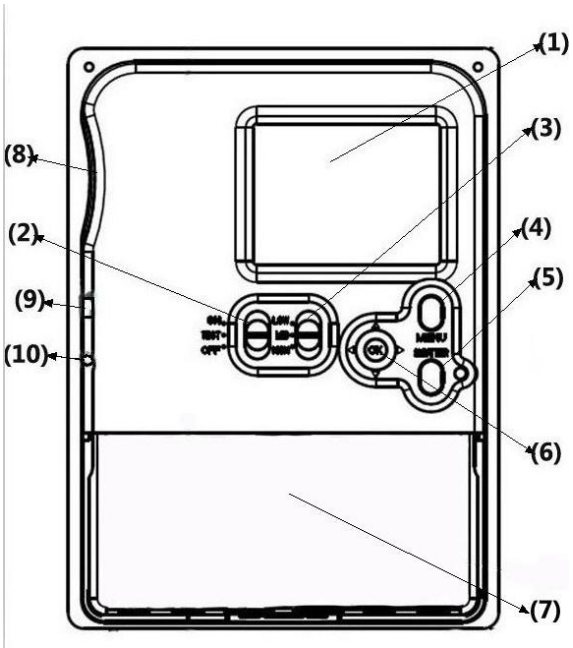
1.2 Camera Body Interface

The camera has the following I/O interfaces: USB connector, SD-card slot, TV output and external DC power connector.

Take a few moments to familiarize yourself with the following the camera controls and displays. It is helpful to bookmark this section and refer to it as you read through the rest of the manual.

1.3 Camera components and features

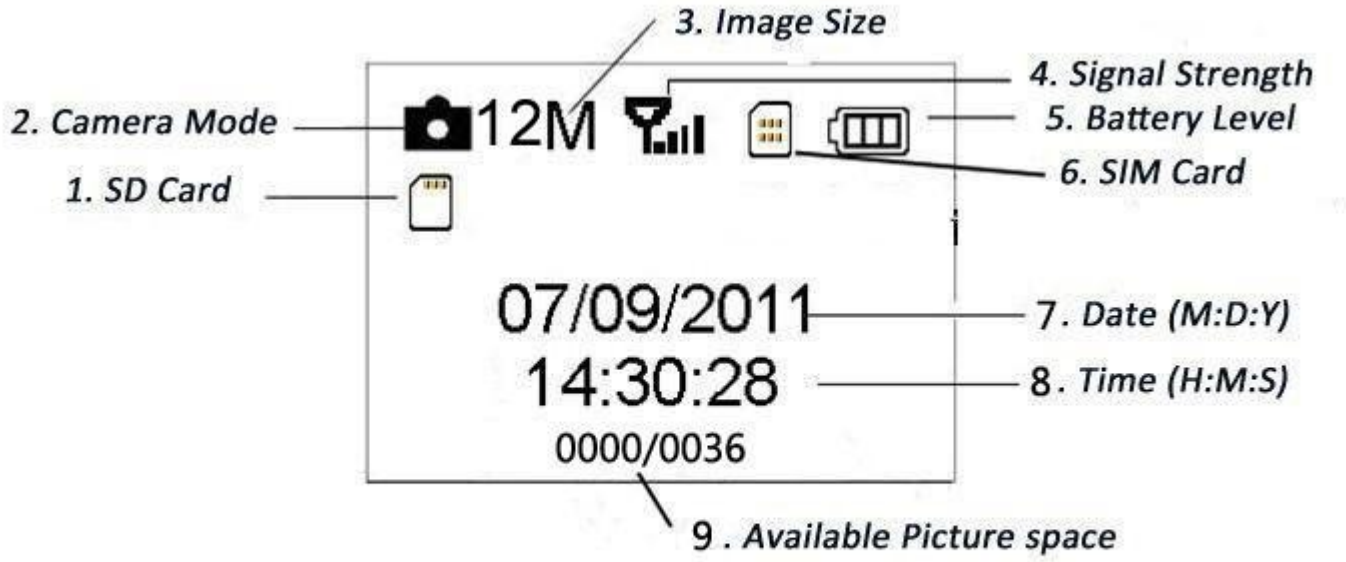
1) Test Indicator
2) Low Battery Indicator
3) Infrared Flash
4) PIR
5) Lens
6) Lock
7) Lock hole



1) 2.5 inch Color LCD Display
2) Power Switch
3) Distance Switch
4) Menu Switch
5) SHUTTER Switch
6) Select Switch
7) Battery Depot
8) SD-Card Slot
9) USB Connector
10) TV Out Connector

1.4 Shooting Information Display

When the camera is turned on (the power switch is slid to TEST position), the shooting information will be displayed on the monitor.



1.5 MMS Function

This camera can send pictures instantly to your mobile device via the GPRS network. You'll be alerted only when something has happened. For MMS to be sent through GPRS, you need to set the settings in the text file for MMS. Review the related information, please refer to section 4.1 setting menu table "MMS mode" and 4.1.15 MMS settings.

SIM card Icon: There are two SIM card icons. Means the SIM card is inserted and it works well. Means it can't work correctly because of low signal strength or other communication issues such as entering incorrect settings of your mobile carrier parameters.

There are 5 submenu settings about the MMS function. Including: APN, MMSC, WAP Gateway, MMS Phone, MMS Mail (refer to 4.1 table). MMS Set means to have the right MMS setting parameters according to your network. Send to means to input the phone number or email address which you want the images to be sent to. All 5 submenus must have the correct settings.

1.6 Supported Format

Item	**Format**
Photo	JPG
Video	AVI
File Format	FAT32

Here are some important notices. You don't need to be concerned about the file system format of the camera unless you have problems with reading the SD-card through your other equipment. If this happens, please format the SD-card in the camera or in a computer at first and then reinsert the card into your camera for another try.

2. Cautions

The working voltage of the camera is 7.5v to 9.0V. The camera is supplied by the rechargeable lithium battery. Please unlock the write-protect before inserting the SD-card.

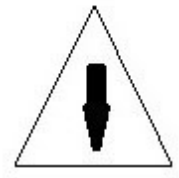
Please insert the SD-card when the power switch is at OFF position before testing the camera.

Please do not insert or take out the SD-card when the power switch is at an ON position. It is recommended to format the SD-card by the camera when used for the first time.

The camera will be in USB mode when connected to a USB port of a computer. In this case, the SD-card functions will be stored as a removable disk.

Please ensure sufficient power when having firmware upgrade, otherwise the upgrade process could be interrupted incorrectly. If any fault occurs after improper upgrading process, the camera may stop functioning.

As communications networks may vary, we cannot guarantee 100% success by sending and receiving MMS.



3. Easy Operation

3.1 Power Supply

Open the battery cover. Confirm that the power switch is at the OFF position. Load the fully charged lithium battery into the depot. Push back the battery cover.

When in low-battery state, the camera will be automatically shut down. Please change the batteries in time. If you have set the MMS function, it will send you an SMS or Email to indicate the low battery situation.

3.2 Insert the SD-card and the SIM-card

Insert SD-card into the card slot with marked side upwards.

Please note that the SD-card can only be plugged in one direction. Make sure that the write-protect switch of the SD-card is on the "write" position.

When using the MMS/SMS/E-mail function, be sure to insert SIM-card into the SIM-card slot with angle in the lower left.

3.3 Power on and Enter into the ON Mode

Before switching on, please pay attention to the following:

1. Avoid temperature and motion disturbances that could be construed as animals or humans such as trees that are exposed to direct sunlight for much of the day or any other heat source. These may cause false triggers.

2. The height from ground for placing the camera should be 1 meter with the object. For example for deer waste height is good size appropriately. In general, one to two meters are preferred.

Slide the power switch to the ON position to power on the camera and enter into the ON mode.

After switching on the camera, the motion indication LED (red) will blink for about 20s. The 20s is a buffering time before automatic capturing photos or videos, e.g. for closing and locking the bottom cover, fixing the camera on a tree and walk away.

In ON mode, the camera will take pictures or videos automatically according to the default settings or previous custom settings. The camera has the sound recording function, so the sound will be embedded in the video clip while capturing a video.

3.4 Enter into the TEST Mode

Slide the power switch to the TEST position to enter into the TEST mode. There are some functions in TEST mode: Custom settings, manual capture, preview.

3.4.1 Custom Settings

Press the MENU switch to enter into menu setting. The camera can be taken over control to manually customize the camera settings which display on the camera or external TV monitor. The detailed operations will be described in "Advanced Operations"chapter.

3.4.2 Manual Capturing

You can press SHUTTER to manually capture photos or a recording video.

3.4.3 View Images or Videos

There are two ways to view the captured images or videos:

1. LCD screen on camera.

2. TV monitors which connects to camera with TV cable.

Turn right to select switch to view images, the latest image will be shown in the LCD screen on camera or TV monitor. Press UP to view the previous image and press DOWN for the next. The detailed operations like deleting images or videos will be described in "Advanced Operations" chapter.

3.4.4 Send MMS

The MMS function will be available after MMS Mode is set as "Instant" any of 1-99 photos is optical for sending one day by GPRS network.

3.5 Power Off

Slide the power switch to OFF position to power off the camera. Please note that even in the OFF mode, the camera still consumes certain power at μA level.

Therefore, please remove the battery if the camera will not be used for a long time.

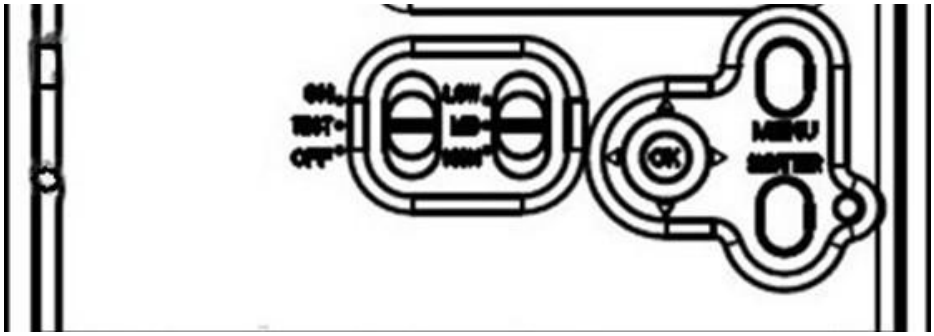
4. Advanced Operations

From the basic operations of the camera in previous chapter, we know that the camera has three basic operation modes:

1. OFF mode: Power switch is at OFF position
2. ON mode: Power switch is at ON position
3. TEST mode: Power switch is at TEST position

In the above three modes, the OFF mode is the specified safe mode when replacing the SD-card or batteries and transporting the camera.

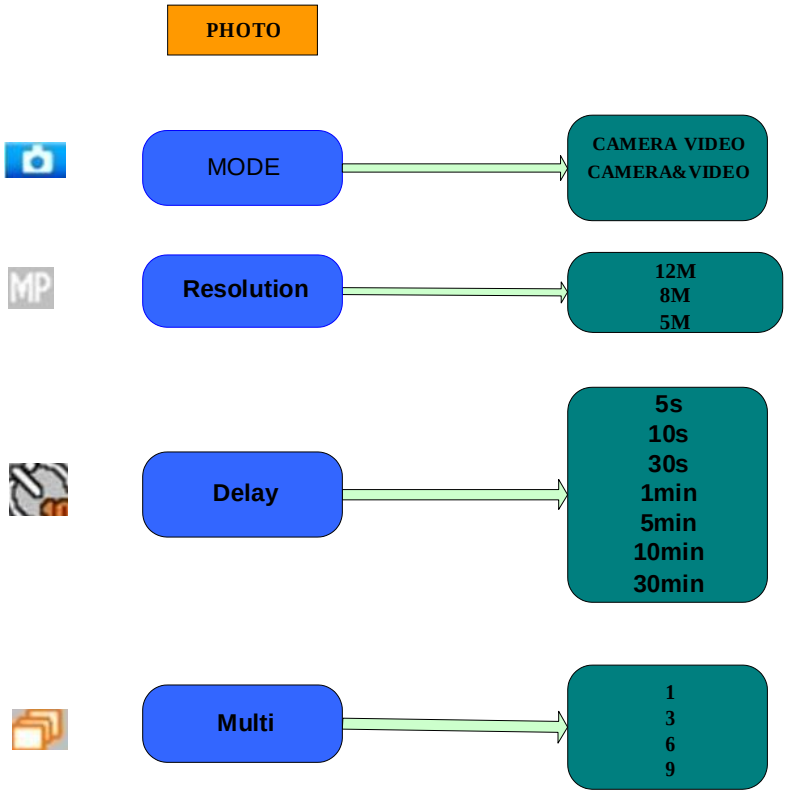
This chapter explains the advanced operations for customizing the camera settings. The settings can only be customized in TEST mode.



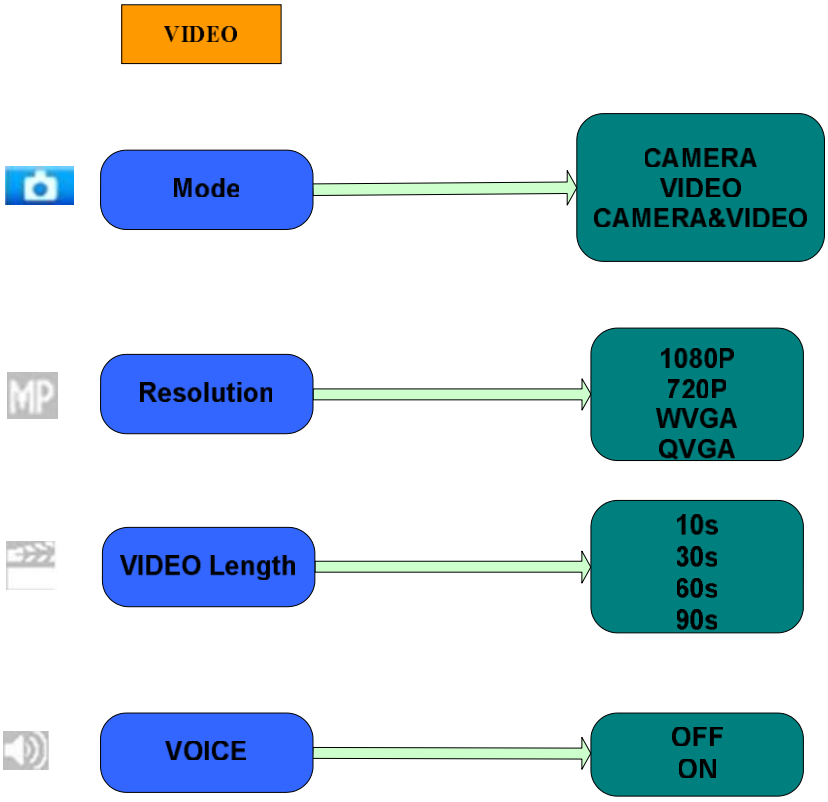
4.1 Settings Menu

To view the camera settings menu, press MENU in the TEST mode (called settings menu in this chapter). The settings menu will be shown on the LCD on camera or the external TV monitor.

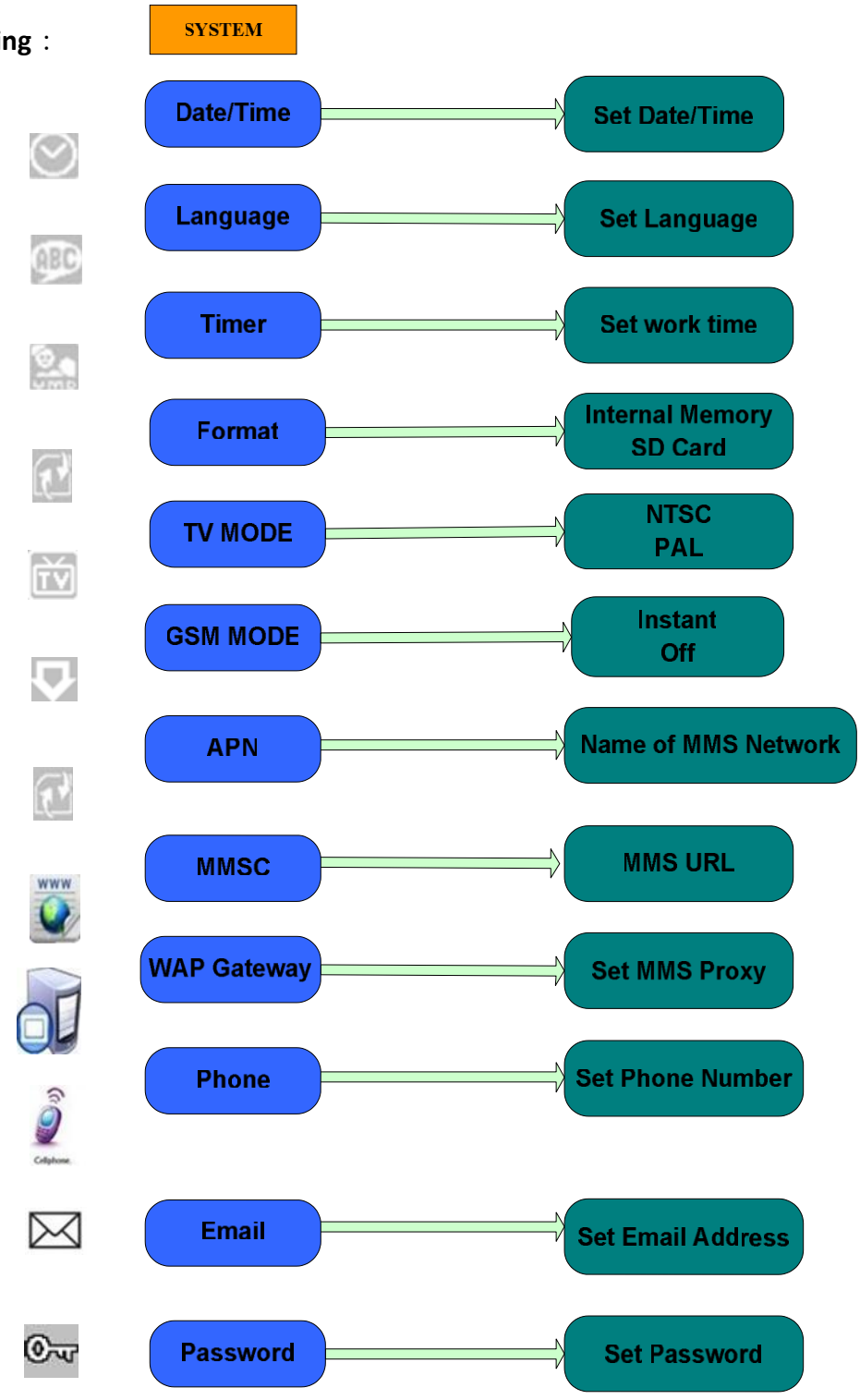
4.1.1 Photo Setting:



4.1.2 Video Setting :



4.1.3 System Setting：



4.1.4 General Settings

The operating steps are suitable for following menu items: Camera Mode, Photo Size, Video Size, Multi, Video Length, Delay, Timer and GSM Mode.

4.1.5 Set Camera Mode

There are three camera modes: Camera, Video and Camera & Video. The way to set the camera mode is via setting menu. The following shows how to set camera mode to Video, provided that the previous option is 'Photo':

a) Press MENU to display the setting menu.

b) Press DOWN to select Mode.

c) Press RIGHT to select Video.

d) Press down the select switch to save the current setting.

Press MENU to cancel setting and return to info display.

4.1.6 Format SD-Card

The system will delete all images or videos stored in the SD-card after formatting, make sure that you have made a backup of important data.

a) Press MENU to display the setting menu.

b) Press RIGHT to select System setting.

c) Press DOWN to select Format.

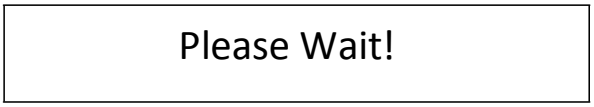
d) Press RIGHT to select SD Card.

e) Press down the select switch to choose Enter to enter into submenu.

f) Press down to select OK. OK will be highlighted.

g) Press OK to start formatting the SD-card. During formatting, the display screen will show a message "Please Wait" as below.

Press MENU to cancel setting and return to info display.



4.1.7 Set Photo Size

This parameter has three values：:12MP，8MP and 5MP. The default value is 5 mega pixels. The following shows how to set pixel size as 5M Pixel:

a) Press MENU to display the setting menu.
b) Press DOWN to select Resolution
c) Press Right to select 12M Pixel
d) Press down the select switch to save the current setting, then press menu to return to info display.
Press MENU to cancel setting and return to info display.

4.1.8 Set Video Size

This parameter also has four values: 1080P, WVGA, QVGA.
The default value is 1080. The following shows how to set 720P video size as provided that the previous option is at WVGA:

a) Press MENU to display the setting menu.
b) Press DOWN to select Resolution.
c) Press RIGHT to select WVGA
d) Press down the select switch to save the current setting, then press menu to return to info display.
Press MENU to cancel setting and return to info display.

4.1.9 Set Date and Time

You can change the date and time of the device by setting this parameter when necessary, e.g., after every battery change. The date format is day/month/year, the time format is hour: minute: second. The valid value for year is between 2010 and 2050.
Provided that the date and time are needed to be set to November 15th, 2011 and half past ten, the steps are as following:

a) Press MENU to display the setting menu.
b) Press right enter into “system”
c) Press DOWN to select Date/Time.
d) Press Right to Display Date/Time Interface, Press UP and DOWN to change the Value
e) Press down the select switch to save all current setting, then press MENU to return to info display.
Press MENU to cancel setting and return to info display.

4.1.10 Set Multi

This parameter affects the number of pictures taken for each triggering in the camera mode. It has four values: “1 Photo”, “3 Photos” “6 Photos” and “9 photos”. Its default value is “1 Photo”. The following shows how to set photo burst to 3 Photos, provided that the previous option is 1 Photo:

a) Press MENU to display the setting menu.
b) Press DOWN to select Multi.
c) Press RIGHT to select 3 pictures.
d) Press down the select switch to save the current setting, then press MENU to return to info display
Press MENU to cancel setting and return to info display

4.1.11 Set Video Length

The following shows how to set video length to 30 Seconds, provided that the previous value is 10 Seconds:

a) Press MENU to display the setting menu.
b) Press DOWN to select Video Length
d) Press down the select switch to save the current setting, then press MENU to return to info display.
Press MENU to cancel setting and exit.

4.1.12 Set Video Sound

The following shows how to turn off the sound of the video:

a) Press MENU to display the setting menu.
b) Press DOWN to select Voice.
c) Press RIGHT to display the VOICE setting Interface.
d) Press UP to select “OFF”
e) Press down the select switch to save the current setting, then press MENU to return to info display.
Press MENU to cancel setting and return to info display

4.1.13 Set PIR Triggering Interval Time

This parameter means that how long the PIR (Passive Infrared motion sensor) will be disabled after each triggering in ON mode. During this time the PIR of the device will not react to the motion of human (or animals). The minimum interval is 5 seconds, it means the PIR works all the time and media is taken almost continuously. The maximum interval is 30 minutes, it means the PIR will be disabled for 30 minutes after each triggering. The default value is 5 seconds.

The following shows how to set PIR Triggering Interval Time as 1 minute provided that previous option is 5 seconds.

a) Press MENU to display the setting menu.

b) Press DOWN to select Delay.

c) Press RIGHT to enter in to the interval setting.

d) Press DOWN to select 1 minute.

e) Press down the select switch to save the current setting, then press MENU to return to info display.

Press MENU to cancel setting and return to info display.

4.1.14 Set Timer

This parameter defines a certain time lapse in a day when The Camera can be triggered. In the rest of the time the device is shut off. The effective value of the hour ranges from 0 to 23 while the minute ranges from 0 to 59.

Provided that the camera should work from eight a.m. to five p.m., the steps are as follows:

a) Press MENU to display the setting menu.

b) Press DOWN to select Timer.

c) Press RIGHT to select item, press UP or DOWN to change the value until the start time changes to 8 and the stop time changes to 17.

d) Press down the select switch to save all current setting, then press MENU to return to info display.

Press MENU to return to previous menu.

4.1.15 MMS Settings

There are some settings to be entered, the steps are as follows:

1. Edit the file ' gsm_info.txt ' in the computer to set the MMS parameters, then save it to SD card, below is for reference:

Please note that this is only an example, for more details please contact your network service provider, and 3 network provider parameters needs to be edited, PHONE and EMAIL could be added up to 4.

2. Load the fully charged batteries.
3. Insert SD card with the txt file.
4. Insert SIM card.
5. Power on and entering into the TEST Mode.

4.1.16 Set MMS Mode

The following shows how to set the GSM mode to Off provided that the previous option is Instant:

a) Press MENU to display the setting menu.

b) Press DOWN to select GSM Mode.

c) Press RIGHT to select Off.

d) Press OK to save the current setting, then press MENU to return to info display.

Press MENU to cancel setting and return to info display.

If you choose “Instant”, you need to select how many MMS you want to send for economy consideration.

You can choose 0 to 99 pictures.

4.1.17 Enter Password

If the password setting is selected as On, after switching on the camera, the LCD screen on camera will prompt to enter password. The default password is off. It can be changed where the steps are as following:

a) Press MENU to display the setting menu.
b) Press DOWN to select Password.
c) Press Up to select On, then press Right to select 4 numbers as password
d) Press OK to save the current setting, then press MENU to return to info display.
f) The LCD screen will prompt to enter password next time you switch on the camera.

Press MENU to cancel setting and return to previous menu.

4.2 Playback

In playback mode, images or videos can be viewed, deleted. The images and videos can be viewed on: LCD screen on camera and TV monitor which connect to camera with TV cable. For simplicity, operations with PC won't be introduced here.

4.2.1 Viewing Photo or Video

a) Switch to TEST mode and enter into info display.
b) Press right the select switch to view the latest picture (or video) in LCD screen on camera, TV monitor or Image viewer with TV-in connector.
c) Press Left to start playing the video when viewing
d) Press Left again to stop playing the video.
e) Press UP to view the previous picture (or video) and DOWN for the next.
f) Press down the select switch to return to info display.

When viewing images, the total number of all images in the SD-card and the index of the displaying image will be shown respectively.

4.2.2 Delete Photo or Video

The operations are as following:

a) Press Right to display Photos and Videos.
b) Press Menu to select Delete.
c) Press right to select delete current or delete all.
d) Press OK, Cancel and OK are prompted.
e) Press OK to delete the image or video.

Press cancel to cancel, then press MENU and press down the select switch to return to info display

Please note that after deleting a picture or a video file, the deleted files can't be restored. Furthermore, in order to delete all the images and video clips in the SD-card, it is suggested to format the SD-card.

4.3 File Numbering

Images and videos are separately saved in the pre-named folder (104MEDIA). File numbering continues by adding one to the last number for each new image or video. The saving name is like PTDC0001.JPB or PTDC0001.AVI.Through the suffix you can distinguish whether the file is an image (with suffix.jpg)or a video(with suffix.avi).

4.4 Firmware Upgrade

This camera is equipped with an automatic upgrade function for you. Upgrading is needed only when an improved firmware is available. The operations are as following:

1. Unzip the update file
2. Copy the FW18NA.bin to SD card.
3. Insert the SD card into the camera.
4. Power on the camera.
5. The camera will read it and update itself automatically. When updating the camera, its screen is black.
6. The screen will light on after being finished
7. Plug out the SD card, then insert it into pc, delete the FW18NA.bin in the SD card.(If you don't do this, the camera will enter update mode when power on again).
8. Insert the SD card into the camera for its working.

Appendix Ⅰ: Technical Specifications

Image Sensor Type(True Megapixels)	8 Mega Pixels Color CMOS
Memory	SD Card 8MB~32GB
Lens	F=3.1; FOV=60 °
Size	160mm * 120mm * 50 mm
IR Filter:	Full Automatic IR Filter
TFT Display Screen:	48x35.69mm (2.36");480(RGB)*234DOT; 16.7M color
PIR Sensitivity	DUAL PIR with 3 sensitivity levels: High/Normal/Low
PIR Sensor Sight Angle	100 Degrees for every one
PIR Sensing Distance	65ft/20m
Number of IR LED	42 LEDs Black or White
Max Night Vision Lighting Distance	65ft/20 meters
Trigger Speed	0.7 second
Low Battery Indicator	Yes
Triggering Interval :	1 second ~ 60mins (default 5 sec)
Selectable Image Resolution:	12MP/8MP/5MP
Multiple Frame	1/3/6/9
Video Resolution	1080P/720P/VGA
File Format	JPEG/AVI
Date Time Imprint	Yes
Moon Phase Imprint	Yes
Exposure:	Auto
MMS/EMAIL/FTP/SMS Support	support
Device Serial No	4 Digits and 26 alphabet set by yourself
Periodic shot	1Second~24Hours
Stand-by current	0.2mA
Stand-by time	3Months(2000mAh Lion battery)
Interface	TV out (NTSC/PAL); USB; SD Card Holder; 6V DC External
Fix Method	Belt, Tripod Nail
Operation Temperature	-30 ~+70℃/-22~+158℃
Power Supply	2000mAh Li-on battery
Camera Socket	Yes
Water proof	IP54
Security authentication	FCC,CE,RoHS

Appendix Ⅱ: Parts List

Part Name	Quantity
Digital Camera	1
9V Power charge	1
Rechargeable lithium battery	1
USB Cable	1
TV cable	1
User's Manual	1
Solar power supply	Optional